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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/058,658
Filing Date: January 28, 2002
Appellant(s): POLLACK, MICHAEL J.

Y. Jae Kim
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 16, 2006 appealing from the Office action mailed April 4, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendments after final rejection has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,956,077	QURESHI et al	9-1999
6,111,599	NANCE et al	8-2000
5,993,902	HEID	11-1999
4,591,794	SHATTUCK et al	5-1986

4,540,258	CHIODO	9-1985
3,778,170	HOWELL et al	12-1973
2002/0116987	BRAITHWAITE et al	8-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al of record (5,956,077) in view of Nance et al of record (6,111,599) and Heid of record (5,993,902).

Qureshi et al discloses an inspection method and apparatus for tanks, and substantially the same optical monitoring system as claimed in claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 for transmitting images from a hostile environment within the interior of a sealed chamber to the chamber exterior, the chamber having a wall and an access port extending through the wall (see Figures 2, 4, 5, column 2, lines 41-47), the monitoring system comprising substantially the same flexible, generally tubular, elongated housing having a distal end, a proximal end and an interior (see 31, 32, 37, 38, 41 of Figures 2 and 8), the proximal end of the housing being rigidly secured to the chamber wall at the access port, the interior of the housing being accessible through the port (see 37 of Figure 2), the interior of the housing including a transmission media for transmitting images of the interior of the chamber from the distal end of the housing to the

proximal end of the housing and through the access port (see 41 of Figures 2 and 8, and column 3, lines 41-51, column 4, lines 3-16, lines 37-67); a monitor located outside of the chamber and connected to the transmission media for receiving and displaying the recorded images of the interior of the chamber (i.e., 67 of Figure 9, and see column 3, lines 41-51, column 4, lines 3-16, lines 37-67); a video camera (i.e., 41 of Figures 2 and 8) positioned to record images of the interior of the chamber; a sensor (i.e., 41 of Figures 2 and 8) for sensing a parameter of the hostile environment, and an apparatus (i.e., 67 of Figure 9) located outside of the chamber and connected to the transmission media for receiving and processing the sensor signal and displaying a representation of the sensor signal.

Qureshi et al does not particularly disclose, though, the followings:

(a) a hermetically sealed housing, the housing being made of a non-porous, corrosive resistant material, the distal end of the housing including a sealed window, wherein the window is formed from a material selected from the group consisting of synthetic sapphire, glass, quartz and a polymeric material, wherein the window is secured to the housing by a method selected from the group consisting of brazing, fusion, and an adhesive, a video camera positioned to record images of the interior of the chamber through the window, a sensor for sensing a parameter of the hostile environment through the window, and transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of the housing as claimed in claims 1, 4, 5, 9, 13, 14, 23, 27, 28, 30, 31; and

(b) the proximal end of the housing being rigidly secured to the chamber wall at the access port to form a hermetic seal between the proximal end of the housing and the chamber as claimed in claims 1, 9, 23, 30, and 31.

Regarding (a), Nance et al discloses an apparatus for observing a hostile environment as shown in Figures 1 and 2, and teaches the conventional use of a hermetically sealed housing (i.e., 10 of Figure 2 and see column 4, lines 30-38) made of a non-porous, corrosive resistant material, wherein the distal end of the housing including a sealed window (i.e., 11 or 13 of Figure 2, and see column 4, lines 12-38), wherein the window is formed from a material selected from the group consisting of synthetic sapphire, glass, quartz and a polymeric material, wherein the window is secured to the housing by a method selected from the group consisting of brazing, fusion, and an adhesive (see Figure 2 and column 4, lines 12-38), a video camera/sensor positioned to record images of the hostile environment/interior of the chamber through the window (see 11, 13, 30 of Figure 2 and column 4, lines 12-65), and transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of the housing (see column 4, lines 12-65). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al and Nance et al references in front of him/her and the general knowledge of hermetically seal housings with sealed windows associated with inspecting chambers, would have had no difficulty in modifying the housing structure as shown in Figure 2 of Qureshi et al by providing the non-porous, corrosive resistant hermetically seal housing with the distal end of the housing including a sealed window as shown in Nance et al for the same well known protection of the camera within the housing from hostile environments when inspecting the interior of chambers purposes as claimed.

Regarding (b), Heid teaches the technical features of forming a hermetical seal between the proximal end of a housing (i.e., camera 50 of Figure 1) and the chamber 12 of Figure 1. Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al,

Nance et al, and Heid references in front of him/her and the general knowledge of securing camera housings at the access ports of chambers, would have had no difficulty in providing the hermetical seal between the proximal end of the housing and the chamber as taught by Heid as part of the modified system within Qureshi et al and Nance et al for the same well known protection from chemical leaks or dangerous gases purposes as claimed.

3. Claims 2, 11, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, and Heid as applied to claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 in the above paragraph (2), and further in view of Shattuck et al of record (4,591,794).

The combination of Qureshi et al, Nance et al, and Heid discloses substantially the same optical monitoring system as above, but does not particularly disclose wherein the housing comprises a flexible sheath formed of a stainless steel bellows as claimed in claims 2, 11, and 25. The particular use of stainless steel bellows for housing structures associated with borescopes and monitoring of chambers, however is old and well recognized in the art, as exemplified by Shattuck et al (see column 3, line 64 to column 4, line 30). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, and Shattuck et al references in front of him/her and the general knowledge of housing structure materials within monitoring systems, would have had no difficulty in providing the stainless steel bellows structure as taught by Shattuck et al for the housing of Qureshi et al for the same well known support and protection of the housing purposes as claimed.

4. Claims 3, 12, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, and Heid as applied to claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 in the above paragraph (2), and further in view of Chiodo of record (4,540,258).

The combination of Qureshi et al, Nance et al, and Heid discloses substantially the same optical monitoring system as above, but does not particularly disclose wherein the housing comprises a flexible polymeric tube as claimed in claims 3, 12, and 26. The particular use of flexible polymeric tubes for housing associated with camera monitoring devices, however is old and well recognized in the art, as exemplified by Chiodo (see 54 of Figure 1 and column 4, lines 48-53). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, and Chiodo references in front of him/her and the general knowledge of housing structure materials within monitoring systems, would have had no difficulty in providing the flexible polymeric tube structure as taught by Chiodo for the housing of Qureshi et al for the same well known support, protection, and flexible movement of the housing purposes as claimed.

5. Claims 6, 7, 17, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, and Heid as applied to claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 in the above paragraph (2), and further in view of Howell et al of record (3,778,170).

The combination of Qureshi et al, Nance et al, and Heid discloses substantially the same optical monitoring system as above, but does not particularly disclose wherein the housing includes a borescope having a viewing end which is aligned with the sealed window, the interior of the housing including a flexible borescope for transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of

the housing and through the port, a monitor located outside of the chamber and connected to the borescope for receiving and displaying images of the interior of the chamber, and wherein the transmission media is comprised of fiber optic bundle as claimed in claims 6, 7, and 17. However, Howell et al discloses a borescope guide tube as shown in Figure 2, and teaches the conventional use of a fiber optic bundle borescope (i.e., 62 of Figure 2, and see column 2, line 53 to column 3, line 7) having a viewing end which is aligned with a sealed window (i.e., as provided by Nance et al), the interior of the housing including a flexible borescope for transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of the housing and through the port (see Figure 2, and column 4, lines 27-49, column 6, lines 32-65), and a monitor (see column 5, lines 12-30) located outside of the chamber and connected to the borescope for receiving and displaying images of the interior of the chamber. Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, and Howell et al references in front of him/her and the general knowledge of borescopes for transmitting and monitoring images, would have had no difficulty in providing the fiber optic bundle borescope for transmitting and monitoring of images as taught by Howell as part of the chamber monitoring within Qureshi et al for the same well known transmission and monitoring of images from a fiber optic borescope purposes as claimed.

6. Claims 8, 15, 16, 24, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, and Heid as applied to claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 in the above paragraph (2), and further in view of Braithwaite et al of record (US 2002/0116987 A1).

The combination of Qureshi et al, Nance et al, and Heid discloses substantially the same optical monitoring system as above, but does not particularly disclose the followings:

(a) wherein the interior of the housing is provided with a fluid under pressure to control the environment within the interior of the housing as claimed in claims 8, 16, and 29;

(b) wherein the camera is an infrared camera as claimed in claim 15; and

(c) wherein the sensor is selected from the group consisting of temperature sensor, a pressure sensor, an oxygen sensor and a spectra graphic chemical analysis sensor as claimed in claim 24.

Regarding (a) to (c), Braithwaite et al discloses an apparatus and method for measuring extensional rheological properties of a material as shown in Figure 1, and teaches the conventional fluid pressure control of an environment within the interior of a housing, temperature sensors, and the use of infrared cameras for monitoring elements within the housing (see sections [0034], [0039], [0040] of page 3, section [0044] of page 4). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, and Braithwaite et al references in front of him/her and the general knowledge of interior environment controls within hostile chambers, would have had no difficulty in providing the infrared camera, temperature sensor, and fluid pressure control system as taught by Braithwaite et al for the interior of the housing of Qureshi et al for the same well known temperature sensing,

infrared imaging, and fluid pressure control of a hostile chamber environment purposes as claimed.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, Heid, and Howell et al as applied to claims 1, 4-7, 9, 10, 13, 14, 17, 20, 21, 23, 27, 28, 30, and 31 in the above paragraphs (2) and (5), and further in view of Shattuck et al of record (4,591,794).

The combination of Qureshi et al, Nance et al, Heid, and Howell et al discloses substantially the same optical monitoring system as above, but does not particularly disclose wherein the housing comprises a flexible sheath formed of a stainless steel bellows as claimed in claim 18. The particular use of stainless steel bellows for housing structures associated with borescopes and monitoring of chambers, however is old and well recognized in the art, as exemplified by Shattuck et al (see column 3, line 64 to column 4, line 30). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, Howell et al, and Shattuck et al references in front of him/her and the general knowledge of housing structure materials within monitoring systems, would have had no difficulty in providing the stainless steel bellows structure as taught by Shattuck et al for the housing of Qureshi et al for the same well known support and protection of the housing purposes as claimed.

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, Heid, and Howell et al as applied to claims 1, 4-7, 9, 10, 13, 14, 17, 20, 21, 23, 27, 28, 30, and 31 in the above paragraphs (2) and (5), and further in view of Chiodo of record (4,540,258).

The combination of Qureshi et al, Nance et al, Heid, and Howell et al discloses substantially the same optical monitoring system as above, but does not particularly disclose wherein the housing comprises a flexible polymeric tube as claimed in claim 19. The particular use of flexible polymeric tubes for housing associated with camera monitoring devices, however is old and well recognized in the art, as exemplified by Chiodo (see 54 of Figure 1 and column 4, lines 48-53). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, Howell et al, and Chiodo references in front of him/her and the general knowledge of housing structure materials within monitoring systems, would have had no difficulty in providing the flexible polymeric tube structure as taught by Chiodo for the housing of Qureshi et al for the same well known support, protection, and flexible movement of the housing purposes as claimed.

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qureshi et al, Nance et al, Heid, and Howell et al as applied to claims 1, 4-7, 9, 10, 13, 14, 17, 20, 21, 23, 27, 28, 30, and 31 in the above paragraphs (2) and (5), and further in view of Braithwaite et al of record (US 2002/0116987 A1).

The combination of Qureshi et al, Nance et al, Heid, and Howell et al discloses substantially the same optical monitoring system as above, but does not particularly disclose wherein the interior of the housing is provided with a fluid under pressure to control the

environment within the interior of the housing as claimed in claim 22. However, Braithwaite et al discloses an apparatus and method for measuring extensional rheological properties of a material as shown in Figure 1, and teaches the conventional fluid pressure control of an environment within the interior of a housing (see sections [0034], [0039], [0040] of page 3). Therefore, it would have been obvious to one of ordinary skill in the art, having the Qureshi et al, Nance et al, Heid, Howell et al, and Braithwaite et al references in front of him/her and the general knowledge of interior environment controls within hostile chambers, would have had no difficulty in providing the fluid pressure control system as taught by Braithwaite et al for the interior of the housing of Qureshi et al for the same well known fluid pressure control of a hostile chamber environment purposes as claimed.

(10) Response to Argument

The appellant argued at pages 6-11 of the Brief filed October 16, 2006 concerning in general that "... the cited references do not disclose (i) a hermetically sealed housing, and (ii) a hermetic seal between the proximal end of the housing and the chamber, as claimed in independent claims 1, 9, 17, 23, 30, and 31 ... Nan discloses a housing 10 formed in a shape of a test tube with an opening 15 at one end. The housing itself is formed from a hermetically sealed double walled chamber 23 ... Nance does not disclose a hermetically sealed housing of the claimed invention ... Heid does not disclose or suggest that the camera is secured to the top, let alone hermetically sealed to the furnace ... Heid does not disclose (i) a hermetically sealed housing or (ii) a hermetic seal between the proximal end of the housing and the chamber of the claimed invention formed by rigidly securing the proximal end of the housing to the chamber ...". The Examiner respectfully disagrees. The Examiner wants to point out that though Qureshi

et al, Nance, and Heid may each provide features that are different from the present invention, it is still nevertheless that the combination of references discloses and renders obvious the claimed invention. Nance et al teaches substantially the same if not the same use of a hermetically sealed housing (i.e., 10 of Figure 2 and see column 4, lines 30-38 of Nance et al) made of a non-porous, corrosive resistant material, wherein the distal end of the housing including a sealed window (i.e., 11 or 13 of Figure 2, and see column 4, lines 12-38 of Nance et al), wherein the window is formed from a material selected from the group consisting of synthetic sapphire, glass, quartz and a polymeric material, wherein the window is secured to the housing by a method selected from the group consisting of brazing, fusion, and an adhesive (see Figure 2 and column 4, lines 12-38 of Nance et al), a video camera/sensor positioned to record images of the hostile environment/interior of the chamber through the window (see 11, 13, 30 of Figure 2 and column 4, lines 12-65 of Nance et al), and transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of the housing (see column 4, lines 12-65 of Nance et al). Such features of Nance et al may certainly be provided within the housing structure as shown in Figure 2 of Qureshi to thereby provide the non-porous, corrosive resistant hermetically seal housing with the distal end of the housing including a sealed window as claimed. And it is considered obvious to provide the hermetical seal between the proximal end of the housing and the chamber as taught by Heid as part of the modified system within Qureshi et al and Nance et al, thereby rendering obvious the claimed invention.

The appellant argued at pages 11-16 of the Brief filed October 16, 2006 concerning in general that "... The examiner merely states that "it would have been obvious to one of ordinary skill in the art, having Qureshi et al and Nance et al references in front of him/her and the general

knowledge of hermetically seal housings with sealed windows associated with inspecting chambers ... in contrast to the examiner's assertion, no reasons have been provided as to why the combination of references would have been obvious ... The blanket statement that one of ordinary skill in the art would have "no difficulty" in making the suggested combination is insufficient for supporting a combination of the references, especially considering the lack of applicability of Nance and Heid with respect to the teaching of the admitted deficiencies of Qureshi ... The Qureshi manhole must be open during ordinary use of the inspection system. Because of this, one of ordinary skill in the art reading Qureshi would understand that the tank being inspected by the Qureshi system would not be hermetically sealed as such would not be practical ... if there was a motivation to combine, for the sake of argument, applying the teachings of Nance and Heid would result in a modification of the claimed device in Qureshi that is permanently sealed to a tank car and has a monitoring sensor protected by a double walled test tub-like insulating layer ...". The Examiner respectfully disagrees. The Examiner believes that the grounds of rejections have been clearly set forth in the above, and no "blanket statement" has been provided in any of the rejections. Since Qureshi teaches that there may be chemicals being exposed within the tank (see column 1, lines 13-27 of Qureshi), there obviously is a need to protect the camera system when viewing the inside of the tank, and one way is to us a hermetically sealed system, for example, as provided by Nance et al. It is submitted again that it is considered obvious to modify the housing structure as shown in Figure 2 of Qureshi et al by providing the non-porous, corrosive resistant hermetically seal housing with the distal end of the housing including a sealed window as shown in Nance et al. Further, the hermetical sea between the proximal end of the housing and the chamber as taught by Heid may obvious be provided

within the modified system of Qureshi et al and Nance et al, thereby rendering obvious the claimed invention.

The appellant argued at pages 16-18 of the Brief filed October 16, 2006 concerning in general that "... The purpose of Qureshi is to eliminate the need for workers to physically climb into railroad tank cars in order to visually inspect the interiors thereof by providing a system for removably and remotely visually inspecting the interior of the railroad tank cars ... securing the system to the tank wall at one manway (or other access port) on one railroad tank car as suggested by the examiner in a "modified" Qureshi/Nance device and forming a hermetic seal between the proximal end of the system and the tank would prevent the system of Qureshi from operating in its intended manner to inspect multiple tank cars ... The combination proposed by the examiner would change the principle of operation of Qureshi because the modified Qureshi device would be required to be secured to an access port of the tank to form a hermetic seal between a proximal end of the housing and the tank ... the Qureshi system would also require reconstruction and redesign of the elements thereof in order to make the system operational and/or transportable with the railroad tank car, thereby changing the basic principle under which Qureshi is designed to operate, and consequently be incapable for its intended use as it would no longer be capable of use in successive cars ...". The Examiner wants to point out again that though the Qureshi et al may disclose various features that are different from the present invention, the combination of Qureshi et al, Nance et al , and Heid nevertheless encompasses the claimed invention. Similar to Qureshi et al, the present invention is also directed to a system for remotely visually inspecting the interiors of a hazardous system. Modification of the Qureshi et al system with a hermetic sealed structure as provided by Nance et al is considered obvious for

the same reasons as discussed above. Though the Examiner agrees with appellant that the Qureshi system would require reconstruction and redesign of the elements thereof, it is however disagreed that such changes to the Qureshi et al system in view of modifications from Nance et al and Heid will change the basic principle under which Qureshi is designed to operate. The modified Qureshi et al in view of the Nance et al and Heid references will still carry out substantially the same if not the same functions of remotely visually inspecting of the interiors of within a hermetically seal housing/hazardous chamber system, as claimed.

The appellant argued at pages 18-20 of the Brief filed October 16, 2006 concerning in general that "...the examiner has not pointed to an objective teaching in either Qureshi, Nance, or Heid, which would lead one skilled in the art to combine each of the references ... the examiner has relied on non-analogous art which is not pertinent to the problem with which the invention was concerned, in his rejection of claims 2, 11, and 25 ... In contrast, Qureshi is directed to an inspection system which does not teach or suggest protection of the monitoring equipment, focusing instead on the portability and movable aspect of the system ... the probe disclosed by Shattuck is not disclosed or even suitable for housing a borescope, but, as clearly stated at col. 1, lines 64-66 of Shattuck, the probe as a whole is merely adapted for insertion into a borescope access port of an engine ...". The Examiner wants to point out that Qureshi et al, Nance et al, Heid, and Shattuck et al all involve monitoring techniques involving the imaging of dangerous, inaccessible, or hazardous environments for remote viewing, and as such it is submitted that these references are all considered analogous art that may obviously be combinable. It is submitted again that the stainless steel bellows as taught by Shattuck may

obviously be provided and used for the housing structure of Qureshi et al, thereby providing the support and protection as claimed.

The appellant argued at pages 21-22 of the Brief filed October 16, 2006 concerning in general that "... the Qureshi patent is concerned with the inspection of a generally open railroad tank car, whereas the Chiodo patent is concerned with a closed system for medical use for inspecting the interior body cavity. The Qureshi device is not sealed, whereas the device of the Chiodo patent is sealed ... Chiodo is not in the same field of endeavor and as Qureshi, Nance, and Heid, and the references have divergent purposes, the combination is a piecemeal attempt to reconstruct the claims using impermissible hindsight ... Chiodo does not teach or suggest a hermetically sealed housing having, within an interior thereof, a transmission media for transmitting an image ...". The Examiner respectfully disagrees. Chiodo is being relied upon for the particular teachings of how well known flexible polymeric tubes are in use with imaging systems, such as the housing of Qureshi et al to provide the support, protection, and flexible movement of the housing, and thereby rendering obvious the claimed invention.

The appellant argued at pages 22-25 of the Brief filed October 16, 2006 concerning in general that "...the Examiner has not pointed to an objective teaching in Howell which would lead one to combine Howell with Qureshi, Nance, and Heid ... the present combination including Howell fails to teach or suggest all elements of claims 6 and 7 ... While Howell discloses a guide tube for directing a borescope, Howell does not teach or suggest a hermetically sealed housing, rigidly secured to the wall of a chamber to form a hermetic seal with a chamber ... there is no reason to sue a borescope with the Qureshi system since borescopes are typically used for capturing images of smaller, confined spaces ...". The Examiner wants to point out that

Howell nevertheless teaches the conventional use of a fiber optic bundle borescope (i.e., 62 of Figure 2, and see column 2, line 53 to column 3, line 7) having a viewing end which is aligned with a sealed window (i.e., as provided by Nance et al), the interior of the housing including a flexible borescope for transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of the housing and through the port (see Figure 2, and column 4, lines 27-49, column 6, lines 32-65of Howell), and a monitor (see column 5, lines 12-30 of Howell) located outside of the chamber and connected to the borescope for receiving and displaying images of the interior of the chamber. And, it is considered obvious to provide the fiber optic bundle borescope for transmitting and monitoring of images as taught by Howell as part of the chamber monitoring within Qureshi et al, thereby rendering obvious the claimed invention.

The appellant argued at pages 25-28 of the Brief filed October 16, 2006 concerning in general the traversal of the rejection in view of the combination of Qureshi, Nance, Heid and Braithwaite, and in particular that "... Braithwaite is non-analgous art as monitoring rheological properties of fluid flow would not be useful for monitoring empty tank cars as in Qureshi ... Braithwaite does not teach or suggest controlling of an environment within an interior of a housing within which sensors and/or cameras are located for the monitoring of an environment outside of the housing ... Braithwaite does not disclose a spectrographic chemical sensor ... the resultant combination is not rendered obvious ... ". The Examiner respectfully disagrees. Braithwaite clearly teaches the particular use of an infrared camera and temperature sensor within a fluid pressure control system that may obvious be provided for the interior of the

housing of Qureshi for the same sensing, imaging, and fluid pressure control of a hostile chamber environment, thereby rendering obvious the claimed invention.

The appellant argued at pages 28-31 of the Brief filed October 16, 2006 concerning in general the traversal of the rejection of claims 18, 19, and 22. The Examiner wants to point out that such arguments have been addressed in the above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

12/29/06

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